

STUDIES IN THE EUPATORIEAE (ASTERACEAE). CCXV.

ADDITIONS TO *AUSTROEUPATORIUM* AND *CRONQUISTIANTHUS*.

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Recent work in the tribe has shown the need for the following two new combinations in *Austro eupatorium* and five new species descriptions and one new combination in *Cronquistianthus*.

AUSTROEUPATORIUM APENSIS R. M. King and H. Robinson, comb. nov.

Eupatorium apense Chod., Herb. Boiss. ser. 2. 3: 708.

1903. The species has the superficial appearance of *Stomatanthes oblongifolius* (Sch.Bip. ex Baker) H. Robins., but is clearly an *Austro eupatorium* in the pubescence of its achenes and the form of its anther filaments.

AUSTROEUPATORIUM SILPHIIFOLIUM R. M. King and H. Robinson, comb.

nov. *Eupatorium silphiifolium* Martius, Flora 20 (2): 105.

1837. The name has previously been placed in the synonymy of *A. inulaefolium* (H.B.K.) K. & R., but examination of type material shows the plant to be the same as *Eupatorium monardaefolium* Walp. over which the Martius name has priority by three years.

CRONQUISTIANTHUS CELENDINENSIS R. M. King and H. Robinson, sp.

nov. Plantae fruticosae ad 1 m altae multo ramosae. Caules rubro-brunnescentes teretes puberuli. Folia opposita, petiolis 2-3 mm longis; laminae ovatae vel deltoideae plerumque 1-2 cm longae et 0.5-1.0 cm latae base obtusae vel truncatae margine multo crenatae reflexae apice breviter acutae supra in nervis depressae puberulae ceterum glabrae subtus laxe albo-tomentellae et dense glandulo-punctatae fere ad basem subtrinervatae, nervis secundariis paucis. Inflorescentiae laxae late corymboso-paniculatae in ramulis ultimis glabris paucicapitatae subglomerulatae. Capitula ca. 5 mm lata et 2-3 mm lata; squamae involucri plerumque flavae ca. 22 subimbricatae 3-4-seriatae late ovatae vel oblongae 0.5-4.0 mm longae et 0.3-1.0 mm latae apice rotundatae extus glabrae laeviter 2-4-costatae; receptacula glabra. Flores ca. 8 in capitulo; corollae albae anguste infundibulares ca. 2.5 mm longae extus plerumque glabrae in lobis multo glandulo-punctatae, tubis ca. 1 mm longis, faucibus ca. 1 mm longis, lobis ca. 0.45 mm longis et 0.25 mm latis; filamenta in parte superiore ca. 0.25 mm longa; thecae ca. 0.7 mm longae; appendices antherarum oblongae ca. 0.2 mm longae et 0.17 mm latae. Achaenia 1.5-1.8 mm longae in costis plerumque superne scabridula; setae pappi albae ca. 35 plerumque 1.7-2.3 mm longae apice tenuiores.

Grana pollinis in diametro ca. 20 μ m.

TYPE: PERU: Cajamarca: Prov. Celendin. Celendin, ravine in hills above town. Alt. ca. 2700 m. Shrub to 1 m. Flowers fragrant, white. 17 May 1964. *Hutchison & Wright 5134* (Holotype, US; isotypes, UC, USM, F. PARATYPES: PERU: Cajamarca: Prov. Celendin. Celendin, hills opposite town ca. 2 km on Balsas road, steep rocky slightly grazed shrubland. Alt. ca. 2700 m. Shrub 1 m or less. Glossy dark green leaves. Flowers white. Very common. 18 May 1964. *Hutchison & Wright 5155* (F, UC, US, USM); Canyon Rio Maranon above Balsas, 8.5 km below summit of road to Celendin. Alt. 2740. Shrub to 1 m. Leaves shiny green above, pale green beneath. Flowers whitish. 27 May 1964. *Hutchison & Wright 5392* (UC, US); On road from Celendin to Balsas. Shrub to 3 ft. tall with white flowers. Roadside weed. May 29, 1966. *Gabriel Edwin & José Schunke V. 3580* (US).

The new species is most distinct in the small heads with mostly yellowish involucre bracts, and by the glabrous upper surfaces of the leaves.

CRONQUISTIANTHUS CHACHAPOYENSIS R. M. King and H. Robinson, sp.

nov. Plantae fruticosae ca. 1 m altae mediocriter ramosae. Caules teretes vix vel non striati dense antrorse subappresse cinereo-puberuli glabrescentes. Folia opposita, petiolis 3-5 mm longis; laminae oblongo-lanceolatae plerumque 3-4 cm longae et 0.6-1.2 cm latae base acutae margine intgerae apice anguste rotundatae supra atro-virides minute subvelutinae subtus pallidiores velutino-tomentosae. Inflorescentiae late corymboso-paniculatae in ramulis cymosis, ramis ultimis 0-4 mm longis dense appresse cinereo-puberulis. Capitula submatura late cylindracea sensim late infundibulares ca. 5 mm altae et 2-4 mm latae; squamae involucri ca. 12 subimbricatae 4-5-seriatae oblongae 0.5-4.0 mm longae et 0.3-1.3 mm latae apice rotundatae minute puberulo-fimbriatae extus glabrae plerumque 4-costatae. Flores ca. 8 in capitulo; corollae albae ca. 2.5 mm longae anguste infundibulares extus plerumque in tubis superioribus et in lobis glandulo-punctatae et sparse minute puberulae, tubis late cylindraceis ca. 1 mm longis, faucibus ca. 1 mm longis, lobis ca. 0.45 mm longis et 0.3 mm latis; filamenta in parte superiore ca. 0.2 mm longa; thecae ca. 0.7 mm longae; appendices antherarum ca. 0.3 mm longae et 0.2 mm latae. Achaenia 1.8-2.0 mm longa plerumque in costis setulifera inter costam glandulo-punctata; setae pappi albae 35-40 plerumque 1.8-2.0 mm longae apice non latiores. Grana pollinis in diametro ca. 20 μ m.

TYPE: PERU: Amazonas: Prov. Chachapoyas, debajo de Chachapoyas. Alt. 1800-1900 m, habitat Monte bajo, flores blancas. Mayo 19, 1962. *Ramón Ferreyra 14440* (Holotype, US).

The species is most distinct in the cymose rather than glomerulate ultimate units of the inflorescence. The oblong entire leaves are also rather distinctive.

CRONQUISTIANTHUS DETERMINATUS (B. L. Robinson) R. M. King and H. Robinson, stat. et comb. nov. *Eupatorium urubambense* var. *determinatum* B. L. Robinson, Contr. Gray Herb., n.s. 68: 33. 1923. In the density of the inflorescence and the dense stipitate glandular pubescence of the stems, the species is close to *Cronquistianthus infantessii* K. & R. The distinctions are given below under the latter.

CRONQUISTIANTHUS INFANTESII R. M. King and H. Robinson, sp. nov. Plantae fruticosae ca. 0.5 m altae multo ramosae. Caules teretes vix vel non striati dense breviter stipitato-glanduliferi. Folia opposita, petiolis ca. 5 mm longis; laminae late ovatae plerumque 8-16 mm longae et 6-12 mm latae base obtusae vel subtruncatae margine multo-crenatae reflexae breviter acutae supra subbullatae pilosulae et dense glandulo-punctatae subtus in nervulis prominentiter reticulatae et dense antrorse appresse puberulae glandulo-punctatae?, nervis secundariis paucis aliquantum irregularibus ascendentibus inferioribus subtrinnervatis. Inflorescentiae in ramulis dense breviter stipitato-glanduliferis et sparse pilosulis terminales. Capitula in glomerulis densis sessilia vel subsessilia 6-7 mm alta et 3-4 mm lata; squamae involucri ca. 20 subimbricatae ca. 4-seriatae late ovatae vel oblongae 1-5 mm longae et 0.8-1.5 mm latae apice rotundatae margine lateraliter puberulo-fimbriatae extus 4-6-costatae in squamis exterioribus minute puberulae interioribus glabrae; receptacula hirtella. Flores ca. 12 in capitulo; corollae albae ca. 3.5 mm longae superne plerumque in lobis dense glandulo-punctatae, tubis ca. 1.2 mm longis, faucibus ca. 1.7 mm longis, lobis ca. 0.5 mm longis et 0.4 mm latis; filamenta in parte superiore ca. 0.3 mm longa; thecae ca. 1.2 mm longae; appendices antherarum ca. 0.3 mm longae et 0.2 mm latae. Achaenia 2.0-2.2 mm longa breviter setulifera non glandulifera; setae pappi albae ca. 35 plerumque 1.5-2.5 mm longae apice sensim vix tenuiores. Grana pollinis in diametro ca. 22 μ m.

TYPE: PERU: Libertad: Prov. Huamachuco, Sartimbamba. Estimulante, flores blancas. 7-5-1962. *J. Infantessii* 916 (Holotype, US).

The specimens were originally determined as *C. chamaedriifolius* (H.B.K.) K. & R., but that has leaves more strongly trinervate with less bullate and more velutinous upper surfaces. The latter also has more broadly rounded involucre bracts with prominent darkened differentiated margins, and yellowish pappus bristles about as long as the corolla. The new species may also be confused with *C. marubiifolius* (Hieron.) K. & R., but that differs by its pilosulous stems, less densely branched inflorescence, and the more rows of involucre bracts with distinct margins. The closest relative seems to be *C. determinatus* (B.L.Robins.) K. & R. of the adjacent state of Ancash, which also has dense stipitate-glandular pubescence on the stems. The latter differs by the pappus more nearly as long as the corolla,

the larger corollas and achenes, and the leaves with more ascending trinervation reaching midleaf.

CRONQUISTIANTHUS MACBRIDEI R. M. King and H. Robinson, sp. nov.

Plantae fruticosae ca. 1.5 m altae mediocriter ramosae. Caules teretes perdense hispiduli. Folia opposita, petiolis 1-4 mm longis; laminae ovatae plerumque 2-5 cm longae et 1.1-2.7 cm latae base leniter cordatae distincte trinervatae margine multo crenatae apice anguste acutae supra leniter bullatae perdense scabridulae subтус reticulato-exsculptae dense hispidulae non glanduliferae. Inflorescentiae in ramis dense corymbosae, ramulis perdense hispidulis. Capitula in glomerulis sessilia vel breviter pedicellata ca. 7 mm longa et 3 mm lata; squamae involucri ca. 25 subimbricatae ca. 4-seriatae interiores superne purpurascens late ovatae vel oblongae 1-5 mm longae et 1.0-1.5 mm latae apice late rotundatae margine et extus superne puberulae plerumque 4-costatae; receptacula glabra. Flores ca. 10 in capitulo; corollae lavandulae ca. 4 mm longae anguste infundulares extus plerumque glabrae in lobis multo glandulo-punctatae, tubis ca. 1.5 mm longis, faucibus ca. 2 mm longis, lobis ca. 0.6 mm longis et 0.3 mm latis; filamenta in parte superiore ca. 0.4 mm longa; thecae ca. 1 mm longae; appendices antherarum ca. 0.2 mm longae et 0.17 mm latae. Achaenia ca. 2 mm longa plerumque superne scabridula; setae pappi albae ca. 35 plerumque 2.5-3.0 mm longae apice sensim angustiores. Grana pollinis in diametro ca. 20 μ m.

TYPE: PERU: Huanuco: Huacachi, estacion near Muna, open rocky ridge, about 6500 feet. Slender-stemmed open shrub, 4-5 ft high, flowers heliotrope. May 20-June 1, 1923. *J. F. Macbride 3887* (Holotype, US).

The species is distinct in the extremely dense hispidulous pubescence of the stems and undersurfaces of the leaves, the lack of glandular-punctations on the leaves, and the distinctly pointed short-petiolate leaves. The species is perhaps close to *C. glomeratus* (DC.) K. & R., but that is not bullate, it is not densely hispidulous, and it has long petioles. The specimen was determined as *Eupatorium marubiiifolium* Hieron. by B. L. Robinson, but that has smaller, more blunt, less distinctly trinervate leaves, it is antrorsely puberulous, and it has glandular punctations on the leaf undersurface.

CRONQUISTIANTHUS ROSEI R. M. King and H. Robinson, sp. nov.

Plantae fruticosae ad 1 m altae interdum flexuosae variabiliter ramosae. Caules teretes dense hispiduli. Folia opposita, petiolis 1-3 mm longis; laminae late ovatae plerumque 1.0-2.3 cm longae et 0.8-1.8 cm latae base subtruncatae vel subcordatae margine multo crenatae vel dentatae apice breviter acutae vel anguste obtusae supra bullatae pilosulae subtus sparse glandulo-punctatae plerumque in nervis et nervulis dense pilosulae fere ad basem subtrinervatae. Inflorescentiae terminales dense

corymbosae, ramulis dense hispidulis. Capitula in glomerulis sessilia vel breviter pedicellata 7-8 mm alta et ca. 4 mm lata; squamae involucri ca. 20 subimbricatae ca. 4-seriatae in partibus expositis purpurascens late ovatae vel oblongae 2-6 mm longae et 1.5-2.0 mm latae apice late rotundatae lateraliter in marginis puberulo-fimbriatae extus glabrae multicostatae; receptacula glabra. Flores ca. 12 in capitulo; corollae lavandulae vel albae 4.5-5.0 mm longae extus plerumque glabrae in lobis glandulopunctatae, tubis 1.5-2.0 mm longis, faucibus ca. 2 mm longis, lobis ca. 0.6 mm longis et 0.4 mm latis; filamenta in parte superiore ca. 0.3 mm longa; thecae 1.3-1.5 mm longae; appendices antherarum ca. 0.3 mm longae et 0.2 mm latae apice rotundatae. Achaenia ca. 2.5 mm longa setulifera superne densiora; setae pappi sordidae ca. 35 plerumque 3-4 mm longae apice tenuiores. Grana pollinis in diametro ca. 25 μ m.

TYPE: ECUADOR: Azuay: Vicinity of Cuenca. Sept. 17-24, 1918. *J.N. Rose, A. Pachano & G. Rose 22919* (Holotype, US). PARATYPES: ECUADOR: Loja: Vicinity of Zaragura. Sept. 27-28, 1918. *J.N. Rose, A. Pachano & G. Rose 23162* (US); Caffar: between Tambo and Suscal. North rim of the valley of the río de Canar. Shrub 1 m. Leaves dark brownish green, bracts pale green, reddish tipped, corolla tube pale greenish, lobes pale lilac, stigmas bright lilac. April 23, 1945. *Manuel Giler, Camp no. E-2783* (US).

The species seems closest to *Cronquistianthus bulliferus* (Blake) K. & R. (*Eupatorium rugosum* H.B.K. non Houtt.), and has a sordid tenuous-tipped pappus as in that species, but the new species has much smaller heads with only ca. 12 flowers. The heads of *C. bulliferus* are ca. 1 cm high with 18-20 flowers and the involucral bracts are more strongly costate. The new species has been identified as *Eupatorium chamaedrifolium* H.B.K. by B. L. Robinson, and seems to be the source of the impression that the pappus in the latter is darkened. Actually, the latter is a thoroughly distinct species with essentially non-bullate densely velutinous upper leaf surfaces, less crenate margins on the leaves, and less truncate bases on the blades.



Cronquistianthus chachapoyensis R. M. King and H. Robinson, Holotype, United States National Herbarium. Photos by Victor E. Krantz, Staff Photographer, National Museum of Natural History.



Cronquistianthus infantesi R. M. King and H. Robinson, Holotype, United States National Herbarium.



Enlargements of heads of *Cronquistianthus*. Top: *C. chachapoyensis*. Bottom: *C. infantesii*.